

REMARKS / ARGUMENTS

Enclosed with this amendment is a Petition to extend the term for response by one month to October 26, 2003, an Amendment Transmittal instructing the payment of an official fee for additional claims 45 to 60 and a Change of Address.

Status of Claims

Claims 1 to 44, all of the claims previously pending in the application, are rejected. Of the previously pending claims, Applicant has amended Claims 1, 2, 8, 14 and 22 to 25; claims 29 to 44 are not amended; and new claims 45 to 60 are presented herewith; leaving Claims 1 to 60 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §112, first paragraph, 35 U.S.C. §112, second paragraph, and 35 U.S.C. §103(a), have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Status of the Drawings

The Examiner has approved the proposed drawing correction. The amendment to the drawing begins on page 12 of this paper.

Objections to the Specification

The Examiner has objected to the specification under 35 U.S.C. §112, first paragraph, as failing to provide an enabling disclosure. Applicant has amended the claims and presented new claims to more particularly describe the subject matter of the invention, which is supported by an enabling disclosure. Further discussion on the claim amendments and support in the specification therefore is provided later in this paper. In addition, the prior Remarks/Arguments with regard to any prior objection under 35 U.S.C. §112 are incorporated by reference.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of this objection.

Rejection Under 35 U.S.C. §112, First Paragraph

Claim 1 to 44 are rejected under 35 U.S.C. §112, first paragraph, for reasons set forth in the objection to the specification. The Examiner comments that the specification fails to provide an enabling disclosure. Applicant traverses this comment for the following reasons. In addition the prior Remarks/Arguments with regard to any prior rejection under 35 U.S.C. §112, first paragraph, are incorporated by reference.

Applicant respectfully submits that where the specification and drawing provides general guidelines as to the scope of the invention such that one of ordinary skill in the art would know what was meant, the subject matter of the invention would have been described and supported in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Applicant believes the present specification, drawing and claims satisfy that burden. As noted in prior Remarks/Arguments, the present specification, drawing and claims disclose and describe and specific and operative embodiment of the invention by example of operating parameters, choice of materials and functioning results.

Applicant has amended Claims 1, 2, 8, 14, 22-25, to now claim, inter alia, the element of a filter or means for filtering an emission spectrum (source of light or radiation having an energy content) with a cutoff frequency such that a first part of the emission spectrum is preserved and a second part of the emission spectrum is stopped, the first part of the spectrum being absent an energy content capable of shifting the temperature of the source, and the second part of the spectrum having an energy content capable of shifting the temperature of the source.

Applicant has presented new Claim 45 to now claim, inter alia, the elements of determining a wavelength of the emission spectrum that has an energy content capable of generating a shift in temperature at the intensifier, and providing a filter between the intensifier and the detector, the filter having a transmission spectrum that suppresses the wavelength that has a temperature shifting energy content.

Applicant has presented Claims 46, and 58 to 60 to now claim, inter alia, the elements of: means for intensifying having an emission spectrum in response to incident radiation, the temperature at the means for intensifying responsive to the energy content

of the emission spectrum; means for providing a detector that has a sensitivity to the emission spectrum; and, means for filtering having a transmission spectrum that suppresses the wavelength of the emission spectrum that has a temperature shifting energy content.

Support for the invention as claimed is found in the description. For example: Paragraphs [0021] and [0030] disclose photons (a quantum unit of light energy) that inherently have an energy content; Paragraph [0030] discloses the effect of photon energy on the temperature of the intensifier 19, which results in a shift of the ratio between output and input of the intensifier 19 at short wavelengths; Paragraphs [0030] and [0035], and Figure 5, disclose a filter 21 having a transmission spectrum that suppresses the wavelength that has a temperature shifting energy content; and, Paragraphs [0020]-[0022] disclose an intensifier 19 being sensitive to the effect of temperature.

Figure 5 discloses the evolution of transmission of an optical filter (curve 31) such that light having a wavelength smaller than about 500 nm is not transmitted, and that light having a wavelength greater than about 500 nm is transmitted. Since all electromagnetic radiation, including light, inherently has an energy content, with the energy content being greater for smaller wavelengths, the energy content of the small wavelength light was found to be capable of shifting (that is, changing or raising) the temperature of the light source. At paragraph [0030], Applicant discloses an observation that the output/input transmission ratio of intensifier 19 was predominantly affected by short wavelength energy. As illustrated at Figure 5, a filter 21 having the characteristic of curve 31 is capable of transmitting a portion of the emission spectrum of intensifier (curve 29) having low heating energy content (wavelengths greater than about 500 nm), and is capable of stopping (or filtering out) a portion of the emission spectrum of intensifier (curve 29) having high heating energy content (wavelengths less than about 500 nm). Figure 5 also discloses the sensitivity of a photosensitive film 30 such that the film (or detection element) 20 and the filter 21 provide for a wavelength exposure window at detection element 20 that is at about 545 nm, which is seen to be the principle peak of emission spectrum of intensifier (curve 29).

Paragraphs [0020]-[0022] disclose a temperature consideration at an imaging means that could have an undesirable effect on the quality of the image, and that the characteristics of the intensifier 19 may be very sensitive to temperature.

Paragraphs [0029]-[0031] disclose a means for filtering out undesirable photons of certain wavelengths while permitting photons of other wavelengths to pass, thereby avoiding a temperature shift at the intensifier 19.

Paragraphs [0034]-[0038] disclose an observation of a temperature shift occurring at the intensifier 19 and the provision of a filter 21 to intercept photons of undesirable wavelengths, thereby reducing errors in measurement.

The Applicant has clearly and precisely described and illustrated the invention as claimed in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The description and claims disclose and teach how to make and practice the invention as claimed as required by 35 USC §112 and discloses and describes a specific *operative* embodiment of the invention as claimed. There is no requirement in the statute for the applicant to provide a theory of operation or any disclosure alleging a scientific basis for the invention as claimed.

Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection, which Applicant respectfully considers to be traversed.

Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 1-28 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention. The Examiner comments that Claims 1, 2, 8, 14, 22, 25, 29, 30, and 42-44, are obscure for reasons relating to temperature; that the term "shift" in Claim 22 is unclear; that the limitations conveyed by "source of light" in Claim 1, "means for emission of light" in Claims 2, 8 and 14, "means for emission of radiation" in Claims 22 and 25, are unclear since the disclosure is directed to a radiation intensifier; and, that there is no antecedent basis for "said cassette" in Claims 23 and 24. Applicant traverses these comments for the following reasons.

Applicant respectfully submits that where the specification provides general guidelines as to the scope of the invention such that one of ordinary skill in the art would know what was meant, the subject matter of the invention would have been described and supported in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Applicant believes the present specification and claims satisfy that burden.

Regarding Claims 1, 2, 8, 14, 22, 25, 29 and 30, Applicant has amended the subject claims and has discussed them above in reference to the rejection under 35 U.S.C. §112, first paragraph. The claim amendments and earlier discussion clearly indicate that the energy content of the emission spectrum may be influential in shifting the temperature of intensifier 19 depending on whether the small wavelength (high-energy) portion is filtered out or not, and that if the temperature of intensifier 19 does shift, then image quality may suffer. In view of all the foregoing remarks and accompanying amendments, Applicant respectfully submits that this rejection has been traversed.

Regarding the term "shift" in Claim 22, Applicant has amended Claim 22 to more particularly describe the instant invention, as discussed earlier. Accordingly, Applicant respectfully submits that this rejection has been traversed.

Regarding the limitations conveyed by "source of light" in Claim 1, "means for emission of light" in Claims 2, 8 and 14, and "means for emission of radiation" in Claims 22 and 25, the Examiner comments that the terms are unclear since the disclosure is directed to a radiation intensifier. Applicant has discussed Paragraphs [0020]-[0022], [0029]-[0031], and [0034]-[0038], and Figure 5, at some length earlier in reference to the rejections under 35 U.S.C. §112, first paragraph, and submits, in respectful disagreement with the Examiner, that the invention as disclosed and as claimed is not directed only to a radiation intensifier, but is rather directed to a light treatment device and method, an imaging cassette, a dose measurement module, a radiology apparatus, and a radiological article of manufacture, as disclosed at Paragraphs [0008]-[0013], [0023]-[0024], [0032], and [0036]-[0038]. In view of the earlier discussion of the invention as claimed and accompanying prior amendments, Applicant respectfully submits that this rejection has been traversed.

Regarding Claims 23 and 24, Applicant has amended both claims to correct for the lack of antecedent basis. Accordingly, Applicant respectfully submits that this rejection has been traversed.

In view of the foregoing, Applicant respectfully submits that the claimed subject matter is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw all of the rejections under 35 U.S.C. §112, second paragraph, which Applicant considers to be traversed.

Furthermore, Claims 29 to 44 were previously indicated as allowable, i.e., patentable over the then cited prior art (Quint et al) and patentable with regard to 35 U.S.C. §112, first and second paragraphs. The Applicant is entitled to rely on the validity of the allowance of Claims 29 to 44 as guidance for amending other pending claims to adding new claims. While the Examiner can cite appropriate new prior art any reversal of the allowance of Claims 29 to 44 is prejudicial to the good faith examination of the application.

Rejections Under 35 U.S.C. §103(a)

Claims 1 to 44 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yamasaki et al. (U.S. Patent No. 6,242,114) (hereinafter, Yamasaki). The Examiner alleges that Yamasaki teaches medical radiation detection means that control the emission of the fluorescent material and that eliminates thermal deterioration of prior art systems. The Examiner acknowledges that Yamasaki does not detail the structure of the detector, but alleges that it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ therefore any known type including photographic and electronic forms (claims 23 and 37-39).

Applicant traverses the Examiner's rejections for the following reasons.

Yamasaki discloses an optical fluorescent composite which controls fluorescence intensity comprising a solid layer containing fluorescent material formed on an optically transparent base or substrate and optically coupled to a spectrally selective filter, also

formed on the base or substrate, that modifies the intensity of either or both the excitation or emission spectra of the phosphor (Abstract, col. 4, lines 33-44). Yamasaki is notably absent any teaching of a temperature sensitive intensifier and an arrangement for compensating for the change in the emission spectrum of the intensifier in response to a temperature change at the intensifier.

Applicant respectfully submits that the obviousness rejection based on the cited reference is improper as the reference fails to teach or suggest each and every element of the invention as claimed. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

In view of the amendments to the claims and the earlier discussion, Applicant submits that Yamasaki is absent a teaching, suggestion, or motivation that would arrive at the claimed invention. For example, Yamasaki does not teach the combination of: a filter disposed between the source and the detector in which the light is filtered at a defined cutoff frequency, the cutoff frequency being such that a first part of an emission spectrum is preserved and a second part of the emission spectrum is stopped, the first part of the spectrum being absent an energy content capable of shifting the temperature of the source, and the second part of the spectrum having an energy content capable of shifting the temperature of the source; or, means for intensifying having an emission spectrum in response to incident radiation, the temperature at the means for intensifying responsive to the energy content of the emission spectrum, and means for filtering having a transmission spectrum that suppresses the wavelength of the emission spectrum that has a temperature shifting energy content. The Examiner has not shown how Yamasaki teaches these elements that are claimed in the invention as claimed.

In view of the foregoing, Applicant submits that Yamasaki fails to teach or suggest each and every element of the invention as claimed and discloses a substantially different invention from the invention as claimed, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Additionally, Applicant respectfully submits that an Examiner cannot establish obviousness by locating references that describe various aspects of applicant's invention as claimed without also providing evidence of the motivating force that would compel one skilled in the art to do what the patent applicant has done. *Ex parte Levengood*, 28, USPQ2d 1300, 1302 (Bd.Pat.App.Int., 1993). References may not be cited or combined indiscriminately. It is not enough for a valid rejection to view the prior art in retrospect once an applicant's disclosure is known. The art applied should be viewed by itself to see if it fairly disclosed doing what an applicant has done. *In re Skoll*, 187 USPQ 481, 484 (CCPA, 1975) (citing *In re Schaffer*, 108 USPQ 326, 328-29 (CCPA, 1956)). See also *In re Kotzab*, 55 USPQ2d 1313 (Fed. Cir. 2000).

Applicant has amended various claims and has presented additional remarks regarding the patentability of the subject claim under 35 U.S.C. §103(a) as discussed previously. Applicant's invention addresses the problem of a temperature sensitive intensifier, which may experience a temperature shift in response to an emission spectrum (paragraphs [0020]-[0021], [0030] and [0035]).

Contrary to the invention as claimed, Yamasaki addresses the problem of fluorescence references that are useful for checking the operation of fluorescence measuring apparatus (col. 1, lines 6-9). Yamasaki is notably absent any teaching of the problem associated with a temperature sensitive intensifier and the use of an optical filter to control the energy content of an emission spectrum, and therefore cannot teach a solution that would obviate the claimed invention.

In view of the foregoing, Applicant submits that a cited reference that does not motivate one skilled in the art to arrive at the invention as claimed cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Furthermore, the Remarks/Arguments presented in earlier amendments with regard to the patentability of the claims over Quint et al. are fully responsive to the traversal of the rejection of the claims over Yamasaki et al. and such Remarks/Arguments are incorporated by reference.

In light of the foregoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §112, first paragraph, 35 U.S.C. §112, second paragraph, and

35 U.S.C. §103(a), have been traversed, and respectfully request that the Examiner reconsider and withdraw these rejections. Accordingly, the Applicant requests a timely Notice of Allowance in this application.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 09-0470.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

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